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OBJETIVOS: Mostrar la importancia de utilizar técnicas de regresión diseñadas expresamente para modelar variables de conteo, así como describir las herramientas disponibles en el programa estadístico Stata para esta clase de modelos. **METODOLOGÍAS:** Los datos utilizados provienen de una muestra de 335 niños con peso bajo al nacimiento atendidos en un hospital pediátrico de tercer nivel de la Ciudad de México, de los cuales se obtuvieron distintas variables sobre consumo de recursos, así como variables demográficas y clínicas que se emplearon como regresores. Primero se realizó la prueba de sobredispersión para comprobar el cumplimiento del supuesto básico de la regresión poisson. Posteriormente se compararon gráficamente las probabilidades estimadas con cuatro diferentes modelos de regresión y se realizaron las pruebas de la razón de verosimilitud y de Vuong para determinar el modelo con el que se obtiene el mejor ajuste, utilizando para ello también los criterios de información de Akaike y bayesiano. Una vez elegido el modelo más apropiado para cada variable de resultado, se estimaron nuevamente los coeficientes de regresión y se obtuvo el cambio porcentual en el valor esperado de la variable de conteo con el comando 'listcoef' de Stata, que facilita a los usuarios la interpretación de los efectos. **RESULTADOS:** El modelo de regresión binomial negativa resultó el más apropiado para predecir los días de estancia hospitalaria, número de pruebas de laboratorio y gabinete, y los días con antibioticoterapia. El modelo de regresión binomial negativa con exceso de ceros fue el de mejor ajuste para los días con nutrición parenteral, días con oxigenoterapia, número de transfusiones, días con administración de aminas y días con ventilador. La variable que se ajustó a un modelo de poisson fue el número de interconsultas. **CONCLUSIONES:** Los modelos de regresión lineal aplicados a datos de conteo pueden producir estimaciones ineficientes, inconsistentes y sesgadas.

RM3

A COMPARISON BETWEEN MARKOV CHAINS AND SYSTEM DYNAMICS MODELING FOR THE ESTIMATION OF METABOLIC SYNDROME COSTS IN A PUBLIC HEALTH CARE DELIVERY ORGANIZATION IN MÉXICO

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OBJECTIVES: The objective of this study was to compare life-time costs for a population obtained through Markov chain (MC) and system dynamics (SD) methodologies. While both methodologies are based on the concepts of state and transition, the meanings of each differ. The importance of this study lies in the fact that in some cases information is available for one type of model or the other, and the possibility of using either tool for modeling a situation is of pragmatic interest. **METHODS:** Models of increasing degrees of complexity were developed. At each level of complexity, a MC model and a SD model were developed and the differences in results obtained were compared. SD models were simulated with Vensim software and MC models with TreeAge Pro software. Data were drawn from an institutional survey and from literature. An important issue in this comparison is that Markov models are based on transition probabilities while system dynamic models rely on material flows. Also, simulation techniques differ in that Montecarlo methods move a patient trough the model until it exits before including another patient, while SD models treat all patients in the cohort simultaneously. Thus, transformations for the set of mathematical expressions in each modeling methodology may lead to similar numerical results while not being conceptually equivalent. **RESULTS:** The simplest models led to equivalent aggregate numerical results. In these cases, the probability of leaving state S_n (MC) is numerically equivalent to inverse residence time (SD). More complex models required adapting the structure of one to be equivalent to the other. **CONCLUSIONS:** Applications of each methodology overlap at a certain aggregation level. When a long period is studied and not much detail is required in each state, SD seems an appropriate tool. When more precision is needed for individual patients, MC analysis seems a better choice.

RM4

FACTORES PREDICTORES DE OBSTRUCCIONES CORONARIAS SIGNIFICATIVAS EN PACIENTES ADULTOS CON CINEANGIOCORONARIOGRAFÍAS REALIZADAS EN URUGUAY, FINANCIADAS POR EL FONDO NACIONAL DE RECURSOS

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OBJECTIVOS: La realización de una cineangiocoronariografía (CACG) es el gold standard para definir la anatomía coronaria. El porcentaje de lesiones coronarias no significativas depende de la definición de "lesión significativa" variando según la magnitud de obstrucción definida, siendo del 9 al 25 % cuando consideramos lesiones menores al 50 %. Existen factores predictores como sexo masculino, edad avanzada, diabetes, dislipemia y presentar un test de isquemia no invasivo positivo. El Fondo Nacional de Recursos (FNR), financia, según normativas de cobertura institucionales, prestaciones médicas altamente especializadas en Uruguay, entre ellas las CACG de las cuales reúne un registro único nacional; procedimientos costosos y no exentos de complicaciones. Objetivos:1) conocer el porcentaje de CACG con lesiones coronarias significativas (mayores al 50 %) realizados entre 1/12/2009 y 31/05/2010; 2) Identificar el tratamiento elegido luego de la realización de la CACG; 3) describir en el proceso de decisión factores predictores que permitan identificar pacientes con alto riesgo de tener lesiones coronarias significativas. **METODOLOGÍAS:** Estudio retrospectivo de una cohorte histórica de pacientes consecutivos mayores de 18 años, con CACG realizada en el período establecido financiada por el FNR. De 2586 CACG realizadas se excluyeron las solicitadas por enfermedad cardíaca no coronaria. **RESULTADOS:** Incluidas 2.326 CACG, 67,2% sexo masculino con media de edad 62,4 años (56 -75 años P25-P75). El total de CACG realizadas con lesiones mayores al 50 % fueron 1.999 (85,9 %). En 541 (22,4 %) se optó por tratamiento médico. Las variables retenidas en el modelo de regresión logística fueron: edad > 50 años, sexo masculino, prestador privado, antecedentes de cardiopatía isquémica, diabetes, infarto trasmural y tener un estudio funcional por imágenes realizado. El modelo mostró buena discriminación (curva ROC 0.76). **CONCLUSIONES:** Este conocimiento podrá ser utilizado para futuras decisiones sobre el financiamiento de los casos con mayor riesgo de lesión coronaria significativa.

POSTER SESSION I

Cancer – Cost Studies

PCN1

SELECTING A MIX OF PREVENTION STRATEGIES AGAINST CERVICAL CANCER FOR MAXIMUM EFFICIENCY WITH AN OPTIMISATION PROGRAM

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BACKGROUND: Screening and vaccination against human papillomavirus (HPV) can help protect against the development of cervical cancer (CC). Neither alone can provide 100% protection against CC. Selecting the most efficient combination of screening and vaccination to prevent CC is therefore an important question to address. **OBJECTIVES:** To identify the mix of CC prevention strategies (screening and/or vaccination against HPV) that minimize CC burden within a fixed budget in Brazil. **METHODS:** The optimal mix of strategies for CC prevention was determined using an optimisation program. The evaluation uses two models. One is a Markov cohort model, adapted to the Brazilian setting, used as the evaluation model. It estimates the costs and outcomes of 52 different prevention strategies combining screening and vaccination. The other is an optimisation model in which the results of each prevention strategy of the previous model are entered as input data. The latter model determines the combination of prevention options to minimize CC under budget, screening and vaccination coverage constraints. The base-case constraints were current budget, screening of 50% women aged 18 to 65 every 3 years, and a maximum 80% vaccination coverage. Sensitivity analyses were conducted on the optimization constraints. **RESULTS:** The base-case optimal prevention strategy would be to have 30% vaccinated only at age 12, 50% both vaccinated and screened with a screening interval extended to 5 years and 20% without any prevention strategy. This would result in a 54% CC reduction from pre-vaccination levels with no budget increase. A sharp reduction in CC is seen when the vaccine coverage exceeds the maximum screening coverage, or when screening coverage exceeds the maximum vaccine coverage, while maintaining the budget. **CONCLUSIONS:** Our models predicted that implementation of vaccination combined with adjusting the screening interval would optimize CC prevention budget allocation to minimize the CC burden in Brazil.

PCN2

COST-EFFECTIVENESS AND BUDGET IMPACT ANALYSIS OF AN IMMEDIATE CARE CENTER AT THE NATIONAL CANCER INSTITUTE, MEXICO

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OBJECTIVES: To assess cost and clinical consequences (day of hospital stay avoided), together with a budget impact analysis and assess frequency of symptoms. **METHODS:** Evaluation of Immediate Care Center records during September 2009. Data collected were: chief complaint, primary disease (oncologic), semiology, requested studies, percentage of hospitalized patients, days of hospital stay. We compared days of hospitalization related to the main symptoms cause of consultation in 2009 versus 2005 getting hospitalization days and costs avoided through a full economic study type analysis cost-effectiveness, retrospective, analytical, longitudinal with a design before and after comparing the effectiveness and efficiency of the implementation of a multidisciplinary service (medical oncologist, surgical oncologist, algologist, internist). **RESULTS:** A total of 583 records were analyzed. Breast cancer was the most common diagnosis (28%), pain as main symptom present (52%) and as a reason for consultation (31.82%). In semiology the most frequent causes of hospitalization in 2009 (with immediate care center) were: somatic pain, dyspnea and fever, these symptoms were compared with patients who require hospitalization for the same reason in September of 2005 (without immediate care center) noting a reduction of 9.08, 3.28 and 3.12 respectively on "days of hospital stay avoided." The percentage of patients hospitalized for 2005 were 25.55% of 493 versus 10.46% of 583 patients during September of 2009. The stratified ICER for somatic pain was $ - 1615 MXN, - $1513 MXN for dyspnea, and - $1169 MXN for fever. We estimated an average monthly savings of $ 659,072.00 MXN pesos. **CONCLUSIONS:** The implementation of an immediate care service for cancer patient management through a comprehensive and multidisciplinary approach results in a highly cost – effectiveness measure in the resolution of symptoms, using timely and appropriate diagnostic and therapeutic tools with consequent decrease in hospitalization rates, reflecting"days of hospital stay avoided" adding an estimated annual budget impact of $ 7, 908, 860.00 MXN pesos.

PCN3

ESTIMACION DE LA CARGA DE LOS TUMORES NEUROENDOCRINOS EN COLOMBIA

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OBJECTIVOS: Estimar el impacto en morbi-mortalidad, uso de recursos y costos asociados a los tumores Neuroendocrinos (TNE) de intestino medio en fase avan-